National Institute of Environmental Health Sciences

# Acute effects of air pollution on asthma hospitalization in Shanghai, China

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**Abstract:**

Air pollution has been accepted as an important contributor to asthma development and exacerbation. However, the evidence is limited in China. In this study, we investigated the acute effect of air pollution on asthma hospitalization in Shanghai, China. We applied over-dispersed generalized additive model adjusted for weather conditions, day of the week, long-term and seasonal trends. An interquartile range increase in the moving average concentrations of PM10, SO2, NO2 and BC on the concurrent day and previous day corresponded to 1.82%, 6.41%, 8.26% and 6.62% increase of asthmatic hospitalization, respectively. The effects of SO 2 and NO2 were robust after adjustment for PM 10. The associations appeared to be more evident in the cool season than in the warm season. Our results contribute to the limited data in the scientific literature on acute effects of air pollution on asthma in high exposure settings, which are typical in developing countries.

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## Resource Description

**Exposure :**

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors, Temperature

**Air Pollution:** Particulate Matter, Other Air Pollution

**Air Pollution (other):** NO2;SO2; black carbon

**Temperature:** Fluctuations

**Geographic Feature:**

resource focuses on specific type of geography

Urban

**Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Asia

**Asian Region/Country:** China

**Health Impact:** ☑

specification of health effect or disease related to climate change exposure

Respiratory Effect

**Respiratory Effect:** Asthma

**Population of Concern:** A focus of content

**Population of Concern:** ☑

populations at particular risk or vulnerability to climate change impacts

Elderly

**Resource Type:** ☑

format or standard characteristic of resource

Research Article

**Timescale:** ☑

time period studied

Time Scale Unspecified